

**From:** [Glenn, Craig](#) on behalf of [Craig R. Glenn](#)  
**To:** [Rumrill, Nancy](#)  
**Cc:** [Albright, David](#)  
**Subject:** Re: FYI - Maui article on Lahaina Wastewater Reclamation Facility  
**Date:** Friday, July 26, 2013 8:47:36 PM

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Hi Nancy,

Thank you very much for the update. I have not spoken to anyone outside yet. What is the difference between and EPA Press Advisory and Press Release?

As based on these releases by EJ and Maui News I am already concerned about how statements are taken out of context and thus misquoted. I am thus very glad the EPA press release is coming out soon. Here are a couple of comments to consider:

The numbers that EJ used needs a little perspective. The 64% number that they cite is actually the percentage of treated wastewater injected into Wells 3 and 4 (the wells that Fluorescein was added to) that we estimate to discharge nearshore. Maui Co. also injects into two other wells (1 and 2). So in the context EJ used (as a fraction of the total treated wastewater injected), the number would be about 54%\* (see below), not 64%. As stated in the report these percentage calculations come with a lot of uncertainties including those inherent in calculating the seep SDG flux.

We did not evaluate any "pollutants," other than nutrients. The denitrification cited in the Final and Interim Reports is critical to evaluating the nutrient loading from the LWRF. In addition, note the comparison of nutrients found at the seeps with other areas we compared in the Final Report on page ES-11 (bottom) to ES-12 (top), for example.

I am not a coral reef ecologist, but speaking as a geochemist, I would not describe the water exiting the seeps as being particularly "acidic," anymore than I would any other naturally occurring brackish submarine groundwater discharge. Most all of the pH values shown in Table 2.2 are >7.0.

Thanks,

Craig

\*The combined Well 3 & 4 injection is 2.69 mgd. Using the 64% dye recovery from Table 4-14, we estimate that we can account for 1.72 mgd at the NSG and SSG. The average (2011-2013) total injection (Table 1-2 again) is 3.16 mgd. So using the percent dye recover we can (only) account for 1.72 mgd discharging at the Submarine Springs out of 3.16 mgd injected. So that comes out to 54 percent, but this is based on the fact that we do not know how much of the treated wastewater from Wells 1 and 2 reaches the ocean: Determining that would require another test.

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On Jul 26, 2013, at 10:33 AM, "Rumrill, Nancy" <[Rumrill.Nancy@epa.gov](mailto:Rumrill.Nancy@epa.gov)> wrote:

Hi Craig,

Article just came out from the environmental groups and earthjustice release of the report. I think EPA should have a press advisory or release early next week with a link to the report.

Thanks, Nancy

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





**From:** Rumrill, Nancy  
**Sent:** Friday, July 26, 2013 1:11 PM  
**To:** Albright, David; Dermer, Michele; Harper, Jim; Janes, Elizabeth; Kerpel, Judith; Leon-Guerrero, Ephraim; OBrien, Robert-A; Rao, Kate; Robin, George; Rumrill, Nancy; Scatliffe, Uedico; Slay, Hudson; Wiltse, Wendy; Smith, DavidW; Roser, Sara; Sablad, Elizabeth  
**Subject:** FYI - Maui article on Lahaina Wastewater Reclamation Facility

<http://www.mauinews.com/page/content.detail/id/574794/Study-links-injection-wells--nearshore-flows.html?nav=10>

## Study links injection wells, nearshore flows

Challenge now to figure out solution, says Bernard of Hawai'i Wildlife Fund

July 25, 2013

By LEE IMADA - Managing Editor ([leeimada@mauinews.com](mailto:leeimada@mauinews.com)) , The Maui News  
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The final results of a University of Hawaii study on the impacts of injection wells at the Lahaina wastewater treatment plant "conclusively demonstrate" a connection between the wells and their flows to nearshore waters.

The results of the study were released Wednesday by four Maui citizen groups and Earthjustice, which filed a lawsuit on behalf of the groups against Maui County in U.S. District Court for "illegally discharging wastewater into the ocean from its Lahaina treatment facility's injection wells."

"This study confirms what we've been saying for years, wastewater injected at the Lahaina facility travels underground and ends up in the ocean offshore of Kahekili Beach, contributing pollutants to near-shore waters," said Caroline Ishida, attorney for Earthjustice, which filed the lawsuit for the Hawai'i Wildlife Fund, Surfrider Foundation, Sierra Club-Maui Group and the West Maui Preservation Association.

Although the injection well study does not go into the effects of the seeping

wastewater on the ocean environment, it does note that the wastewater is warmer, more acidic and less salty than the surrounding ocean water near the undersea seepage points identified through dye testing. The water also has elevated nutrient levels, particularly phosphorous.

The lawsuit, filed in April 2012, contends that the wastewater making its way to the ocean endangers the public, contributes to algal growth and harms coral reefs.

Hannah Bernard of the Hawai'i Wildlife Fund said that while the UH study did not look into the environmental effects of the wastewater seepage, other studies have shown that water quality and temperature "can cause impacts on the reefs." Excess nutrients can be attributed to algal blooms, she added.

Ishida was not aware of additional studies on the specific impacts of the discharged wastewater from the Lahaina wastewater treatment plant on the nearshore waters. She did say that the UH study, completed last month, "gives us cause for concern" and that "it's clear that something needs to be done about this."

Ishida and Bernard said that they are in negotiations with the county over the lawsuit and could not comment on the specifics of those negotiations. Bernard did indicate that the study would strengthen their hand.

"We are pleased with the progress," said Bernard of the negotiations.

Citing the pending litigation, Lois Whitney, county spokeswoman, said Wednesday that the county was unable to comment on the news release or the study.

The study was led by Craig R. Glenn of the School of Ocean and Earth Science and Technology at UH-Manoa and prepared for the state Department of Health, Environmental Protection Agency, and the U.S. Army Engineer Research and Development Center.

In July 2011, UH researchers put dye into the injection wells to trace the wastewater's path to the coast, the news release said. The dye appeared 84 days later at small seepage points about a half-mile from the plant and between 3 and 25 yards offshore of Kahekili Beach. The average transit time of the dye from the injection well to the ocean was 15 months.

The study estimated that 64 percent of the injected wastewater reached coastal waters via submarine springs. The discharge from the springs was estimated at between 2.2 million and 3.3 million gallons per day.

"In sum, our results conclusively demonstrate that a hydrogeologic connection exists between LWRF (Lahaina Wastewater Reclamation Facility) Injections Wells 3 and 4 and nearby coastal waters of West Maui," the report concluded.

The sewage treatment plant serves about 40,000 people and receives about 4 million gallons a day, the report said. About 0.7 mgd to 1.5 mgd of the facility's water is sold to customers, such as the Kaanapali Resort for landscape and golf course irrigation. The balance of the water is discharged into four on-site injection wells.

An earlier report indicated that bacteria was not present or well within standards for safe swimming in the discharge areas. In 2011, the EPA ordered the county to increase disinfection before pumping effluent into the injection wells.

Bernard said the results of the study indicate that "people's instincts are good."

Residents knew something was wrong and believed it was wastewater from the treatment plant.

"Now we have the science to confirm that," she said.

That's why to her, the study's result is not a surprise.

"It is total vindication," she said.

The challenge now is to figure out a solution.

"We need to do a better job of using wastewater. . . . (and) not throwing it down a hole anymore," Bernard said. "That's for sure."

\* Lee Imada can be reached at [leeimada@mauinews.com](mailto:leeimada@mauinews.com).

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